

**WHAT IS CLAIMED IS:**

- 1        ~~1.~~     A method of collecting network traffic data comprising:  
2        receiving a group of information;  
3        determining whether to process the group of information for network data  
4        collection according to a sample algorithm;  
5        processing the group of information for network data collection if the  
6        determination is to process the group of information; and  
7        forwarding the group of information to a destination.
  
- 1        2.        The method of Claim 1 wherein the group of information is an IP  
2        packet.
  
- 1        3.        The method of Claim 1 wherein the sample algorithm is selected from  
2        one of linear, exponential, natural log, burst, and traffic attribute.
  
- 1        ~~4.~~     The method of Claim 1 wherein forwarding the group of information  
2        to the destination comprises:  
3        identifying the destination using a forwarding table;  
4        if the destination is in the forwarding table, automatically forwarding the  
5        group of information to the destination; and  
6        otherwise sending the group of information to one or more processing engines  
7        to determine routing to the destination and forwarding the group of  
8        information according to the determined routing.
  
- 1        5.        The method of Claim 1 wherein forwarding the group of information  
2        to the destination is performed after processing the group of information.

1       6.       The method of Claim 1 wherein the processing of the group of  
2 information for network data collection comprises:  
3       determining if the group of information is part of one or more recorded traffic  
4       flows;  
5       creating a new entry in a table if the group of information is not part of the one  
6       or more recorded traffic flows;  
7       incrementing a field in an existing entry in the table if the group of  
8       information is part of the one or more recorded traffic flows; and  
9       time stamping the group of information.

1       7.       The method of Claim 6 wherein the processing of the group of  
2 information for network data collection further comprises:  
3       creating a traffic information packet; and  
4       transmitting the traffic information packet to a network traffic data collection  
5       application.

1       8.       The method of Claim 7 wherein the traffic information packet  
2 comprises a header and one or more flow records.

1       9.       An apparatus for collecting network traffic data comprising:  
2 means for receiving a group of information;  
3 means for determining whether to process the group of information for  
4       network data collection according to a sample algorithm;  
5 means for processing the group of information for network data collection if  
6       the determination is to process the group of information; and  
7 means for forwarding the group of information to a destination.

1       10.      The apparatus of Claim 9 wherein the group of information is an IP  
2 packet.

1       11.      The apparatus of Claim 9 wherein the sample algorithm is selected  
2 from one of linear, exponential, natural log, burst and traffic attribute.

1           12.     The apparatus of Claim 9 wherein the means for forwarding the group  
2 of information to the destination comprises:  
3           means for identifying the destination using a forwarding table;  
4           means for automatically forwarding the group of information to the destination  
5                 if the destination is in the forwarding table; and  
6           means for sending the group of information to one or more processing engines  
7                 to determine routing to the destination and then forward the group of  
8                 information according to the determined routing otherwise.

1           13.     The apparatus of Claim 9 wherein the means for processing of the  
2 group of information for network data collection comprises:  
3           means for determining if the group of information is part of one or more  
4                 recorded traffic flows;  
5           means for creating a new entry in a table if the group of information is not part  
6                 of the one or more recorded traffic flows;  
7           means for incrementing a field in an existing entry in the table if the group of  
8                 information is part of the one or more recorded traffic flows; and  
9           means for time stamping the group of information.

1           14.     The apparatus of Claim 13 herein the means for processing of the  
2 group of information for network data collection further comprises:  
3           means for creating a traffic information packet; and  
4           means for transmitting the traffic information packet to a network traffic data  
5                 collection application.

1           15.     The apparatus of Claim 14 wherein the traffic information packet  
2 - comprises a header and one or more flow records.

1           16.     A network node for collecting network traffic data having one or more  
2 processing engines and a memory comprising a set of instructions to:  
3           receive a group of information;

4       determine whether to process the group of information for network data  
5               collection according to a sample algorithm;  
6       process the group of information for network data collection if the  
7               determination is to process the group of information; and  
8       forward the group of information to the destination.

1           17.     The network node of Claim 16 wherein the group of information is an  
2     IP packet.

1           18.     The network node of Claim 16 wherein the sample algorithm is  
2     selected from one of linear, exponential, natural log, burst and traffic attribute.

1           19.     The network node of Claim 16 wherein the set of instructions to  
2     forward the group of information to the destination comprises a set of instructions to:  
3       identify the destination using a forwarding table;  
4       if the destination is in the forwarding table, automatically forward the group of  
5               information to the destination; and  
6       otherwise send the group of information to one or more processing engines to  
7               determine routing to the destination and forward the group of  
8       information according to the determined routing.

1           20.     The network node of Claim 16 wherein the set of instructions to  
2     process the group of information for network data collection comprises a set of  
3     instructions to:  
4       determine if the group of information is part of one or more recorded traffic  
5               flows;  
6       create a new entry in a table if the group of information is not part of the one  
7               or more recorded traffic flows;  
8       increment a field in an existing entry in the table if the group of information is  
9               part of the one or more recorded traffic flows; and  
10      time stamp the group of information.

1           21.     The network node of Claim 20 wherein the set of instructions to  
2 process the group of information for network data collection further comprises a set of  
3 instructions to:

4           create a traffic information packet; and  
5           transmit the traffic information packet to a network traffic data collection  
6           application.

1           22.     The network node of Claim 21 wherein the traffic information packet  
2 comprises a header and one or more flow records.

1           23.     An apparatus for collecting network traffic data comprising:  
2 one or more route processors;  
3 one or more switch fabrics coupled to the one or more route processors;  
4 one or more destination line cards coupled to the one or more switch fabrics;  
5 a source line card coupled to the one or more switch fabrics, wherein the  
6           source line card  
7           receives a group of information;  
8           determines whether to process the group of information for network  
9           data collection according to a sample algorithm;  
10          processes the group of information for network data collection if the  
11          determination is to process the group of information; and  
12          forwards the group of information to one of the one or more  
13          destination line cards.

1           24.     The apparatus of Claim 23 wherein the group of information is an IP  
2 packet.

1           25.     The apparatus of Claim 23 wherein the sample algorithm is selected  
2 from one of linear, exponential, natural log, burst and traffic attribute.

1           26.     The apparatus of Claim 23 wherein to forward the group of  
2 information to one of the one or more destination line cards, the source line card:  
3           identifies the one of the one or more destination line cards using a forwarding  
4           table;  
5           if the one of the one or more destination line cards is in the forwarding table,  
6           automatically forwards the group of information to the one of the one  
7           or more destination line cards; and  
8           otherwise sends the group of information to one or more processing engines to  
9           determine routing to one of the one or more destination line cards and  
10          then forwards the group of information according to the determined  
11          routing.

1           27.     The apparatus of Claim 26 wherein the one or more processing engines  
2 is located on the source line card.

1           28.     The apparatus of Claim 23 wherein to process the group of information  
2 for network data collection, the source line card:  
3           determines if the group of information is part of one or more recorded traffic  
4           flows;  
5           creates a new entry in a table if the group of information is not part of the one  
6           or more recorded traffic flows;  
7           increments a field in an existing entry in the table if the group of information  
8           is part of the one or more recorded traffic flows; and  
9           time stamps the group of information.

1           29.     The apparatus of Claim 28 wherein to process the group of information  
2 for network data collection, the source line card further:  
3           creates a traffic information packet; and  
4           transmits the traffic information packet to a network traffic data collection  
5           application.

- 1           30.     The apparatus of Claim 29 wherein the traffic information packet
- 2     comprises a header and one or more flow records.